

REMARKS

Claim 1 has been amended such that in item (ii), the high water-absorbing, self-elongating yarn (1) is limited to one in the form of a polyetherester monofilament. This amendment is supported by the passage at page 25, lines 24 to 25 of the description, that is, "the number of filaments is preferably in a range from 1 to 300" and Example 1 at page 40, lines 23 to 31, wherein a polyetherester polymer consisting of hard segments formed from polybutylene terephthalate and soft segments formed from only polyoxyethylene glycol, was melted and extruded through a spinneret for spinning a monofilament, and thus a polyetherester monofilament was produced. Also, in Example 5, the same polyetherester monofilament yarn (1) as that in Example 1 was used.

Also, in item (ii) of amended claim 1, the soft segments consist of polyoxyethylene glycol only. This feature is supported by the passage at page 23, lines 22 to 30, and Example 1 (page 40, lines 24 to 31) in the specification.

In addition, claim 1 has been amended to make editorial changes and for purposes of further clarification.

Further, claim 3 has been amended to depend from claim 1.

Entry of the above amendments is respectfully requested.

Objection to Claim 3

On page 2 of the Office Action, in paragraph 1, the Examiner has objected to claim 3 because it is written to be dependent on claim 3.

In response, Applicants have amended claim 3 to depend from claim 1. Accordingly, Applicants submit that this objection has been overcome, and withdrawal of this objection is respectfully requested.

Written Description Rejection

On page 2 of the Office Action, in paragraph 3, claims 1, 3-7, 9-16, and 18-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

In particular, the Examiner indicates that it is not clear if the formula $A/B \leq 0.9$ is a structural limitation or the length is dependent on the test measurements wherein the yarn is measured under a load.

In response, Applicants submit that it is clear from the amended claim language that the formula $A/B \leq 0.9$ is a structural limitation in the claims in which yarn (2) is longer than yarn (1). Applicants note that the yarns usually have a waved form under no load, so the length of the yarns are measured under a predetermined load under which the yarn is straightened but not stretched.

Thus, Applicants submit that the amended claims are supported by adequate written description, and withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. 112, Second Paragraph

On page 4 of the Office Action, in paragraph 4, claims 1, 3-7, 9-16, and 18-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

In particular, the Examiner indicates that it is unclear what the phrase “picked up from the test piece” in claim 1 is referring to.

In response, Applicants note that the phrase at issue has been deleted from amended claim 1, and thus withdrawal of this rejection is respectfully requested.

Obviousness Rejections

On page 5 of the Office Action, in paragraph 5, claims 1, 3-7, 9-12, 16 and 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tebbe (US 6,767,850) in view of Doi et al (US 6,403,216) and DuFour (US 4,500,679). On page 13 of the Office Action, in paragraph 6, claims 5, 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tebbe (US 6,767,850) in view of Doi et al (US 6,403,216) and DuFour (US 4,500,679) and in further view of Chesebro, Jr. (US 5,095,548). On page 16 of the Office Action, in paragraph 7, claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tebbe (US 6,767,850) in view of Doi et al (US 6,403,216) and DuFour (US 4,500,679) and in further view of Safrit et al. (US 4,341,096).

Applicants respectfully submit that the invention as recited in the amended claims is not obvious over the cited art combinations, and request that the Examiner reconsider and withdraw these rejections in view of the following remarks.

Initially, Applicants submit that the woven or knitted fabric as claimed in presently amended claim 1 has the following features.

Feature (A): The woven or knitted fabric contains high water-absorbing, self-elongating yarns (1) and low water-absorbing, self-elongating yarns (2).

Feature (B): The high water-absorbing and self-elongating yarns (1) have a self-elongation of +5% or more, and the low water-absorbing, self-elongating yarns (2) have a self-elongation lower than +5%, determined by the measurement as defined in item (i) of amended claim 1.

Feature (C): The yarn (1) is constituted from a polyetherester monofilament formed from polyetherester elastomer comprising hard segments comprising polybutylene terephthalate blocks and soft segments consisting of polyoxyethylene glycol having a number average molecular weight of 1,000 to 6,000, the ratio by mass of the hard segments to the soft segments in the polyetherester elastomer being in the range of from 30/70 to 70/30.

Feature (D): When the yarns (1) and (2) are arranged in the same direction as each other in the test fabric piece as defined in the amended claim 1, a ratio of the mean length (A) of the yarns (1) measured under the specific load as defined in the amended claim 1 to the mean length (B) of the yarns (2) measured under the specific load as defined in the amended claim 1 satisfies the requirement:

$$A/B \leq 0.9.$$

The combination of features (A), (B), (C) and (D) altogether enables the resultant woven or knitted fabric to exhibit a characteristic performance such that when the fabric is wetted with water, the opening area of the fabric increases to increase the air-permeability of the fabric and when the fabric is dried, the opening area of the fabric decreases to decrease the air-permeability of the fabric, while the change in dimensions and configuration of the fabric is minimized.

Therefore, the woven or knitted fabric of the present invention is useful as a clothing fabric, particularly for underwear or sportswear, because the air-permeability of the fabric increases when wetted with water although the change in dimensions thereof is relatively small.

Also, the woven or knitted fabric of the present invention containing two different types of yarns does not need to include expensive conjugated fibers or special processed yarns, and thus is suitable for practical use.

Applicants now have the following comments on the references.

U.S. Patent 6,767,850 (Tebbe)

Tebbe discloses, in column 10, lines 21 to 59, an embodiment (fabric web 10) of the two dimensional textile material, wherein the fabric web 10 is shown in Fig. 18 and formed from warp threads 80 and weft threads 82 both substantially uninfluenced by an environmental parameter (temperature or humidity) variation. The fabric web 10 further contains control weft threads 84, the elongation of which increases in response to increase in the environmental temperature or humidity.

In view of the passage in column 10, lines 60 to 64, of Tebbe, the control thread 84 can be made as a monofilament synthetic fiber.

However, Tebbe does not teach or suggest feature (C) in which the polyetherester monofilament yarn (1) is formed from the specific polyetherester elastomer comprising hard segments comprising polybutylene terephthalate blocks and soft segments consisting of polyoxyethylene glycol having a number average molecular weight of 1,000 to 6,000, and the ratio by mass of the hard segments to the soft segments in the polyetherester elastomer is in the range of from 30/70 to 70/30.

Also, Tebbe is quite silent as to features (B) and (D) of the present invention.

U.S. Patent 6,403,216 (Doi et al.)

Applicants' argument against Doi is the same as that in the last response.

The water-absorbing elastic synthetic fiber disclosed in Doi is formed from a blend of an elastic synthetic resin having a low water-absorbing property with a water-absorbing resin.

However, Doi does not teach or suggest feature (C) of the present invention. Further Doi is quite silent as to features (A), (B) and (C).

U.S. Patent 4,500,679 (DuFour)

Applicants' argument against DuFour is the same as that in the last response. Applicants note that DuFour's thermoplastic copolyetherester elastomer (A) comprises soft segments formed from linear elastic etherester units derived from reaction products of a polyetherglycol with a dicarboxylic acid. This type of elastic polyetherester polymer falls outside of the scope of feature (C) of the present invention, in which feature (C), the soft segments consist of polyoxyethylene glycol, but not derivatives of polyoxyethylene glycol.

Combination of Tebbe with Doi and DuFour

None of Tebbe, Doi and DuFour teach or suggest the feature (C) of the present invention. Thus, there is no motivation to combine Tebbe with Doi and DuFour to teach or suggest the specific feature (C).

Thus, the combination of Tebbe with Doi and DuFour cannot render obvious the combination of Features (A), (B), (C) and (D) altogether and the specific advantages derived from the combination of Features (A) to (D) altogether.

U.S. Patent 5,095,548 (Chesebro)

Applicants' argument against this reference is the same as that in the last response. Chesebro does not teach or suggest feature (C) of the present invention.

Combination of Tebbe with Doi, DuFour and Chesebro

None of Tebbe, Doi, DuFour and Chesebro teach or suggest the specific feature (C) of the present invention, and thus no combination of them can render obvious the woven or knitted fabric as claimed in the amended claim 1.

U.S. Patent 4,341,096 (Safrit)

Applicants' argument against Safrit is the same as that in the last response. Safrit does not teach or suggest feature (C) as defined in the amended claim 1.

Combination of Tebbe with Doi, DuFour and Safrit

None of Tebbe, Doi, DuFour and Safrit teach or suggest the specific feature (C) as defined in the amended claim 1 and the specific advantages derived from the combination of feature (C) with features (A), (B) and (D) as defined in the amended claim 1.

Thus, no combination of Tebbe with Doi, DuFour and Safrit can render obvious the combination of Feature (C) with Features (A), (B) and (D) as defined in the amended claim 1.

Further, Applicants submit the following.

- (1) Japanese Patent No. 039,92,687 B corresponding to the present application has been granted.
- (2) The fabric as claimed in the amended claim 1 is now produced and sold under the trademark "SPHERE REACT" from NIKE INCORPORATED.
- (3) For the fabric of the present invention, a Prize for New Technology was awarded from The Society of Fiber Science and Technology, Japan, in 2006.

Thus, Applicants submit that the invention as recited in the amended claims is not obvious over the cited art combinations, and withdrawal of these rejections is respectfully requested.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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